

CLAIMS

What is claimed is:

- 1 1. A method for identifying a host at a physical layer of an information handling
2 system, the method comprising:
3 issuing an original command from one of a plurality of hosts, the original
4 command is encoded in a first protocol;
5 receiving the original command by a protocol converting module;
6 determining an address of the one of the plurality of hosts that issued the
7 original command;
8 converting the first protocol to a second protocol, wherein the original command
9 is encoded in the second protocol;
10 adding an identifier to the original command encoded in the second protocol to
11 make a revised command, the identifier associating the one of the plurality of hosts that issued
12 the original command; and
13 sending the revised command to a target device.
- 1 2. The method of claim 1, further comprising converting the revised command to
2 the original command.
- 1 3. The method of claim 1, wherein the original command includes a fibre channel
2 command.
- 1 4. The method of claim 1, wherein the original command includes an iSCSI
2 command.
- 1 5. The method of claim 1, wherein the revised command includes a SCSI
2 command.
- 1 6. The method of claim 1, wherein the physical layer includes a SCSI target
2 device.

- 1 7. The method of claim 1, wherein the host includes a fibre channel host.
- 1 8. The method of claim 1, wherein the host includes an iSCSI host.
- 1 9. The method of claim 1, wherein the first protocol includes a fibre channel
2 protocol, and wherein the address of the host includes a port identification address.
- 1 10. The method of claim 1, wherein the first protocol includes an Internet protocol,
2 and wherein the address of the host includes an index, the index associating an Internet protocol
3 address or iSCSI node name.
- 1 11. The method of claim 1, wherein the first protocol includes an iSCSI protocol.
- 1 12. The method of claim 1, wherein the second protocol includes a SCSI protocol.
- 1 13. The method of claim 1, wherein the protocol converting module includes a fibre
2 channel to SCSI appliance.
- 1 14. The method of claim 1, wherein the protocol converting module includes an
2 iSCSI-SCSI appliance.
- 1 15. The method of claim 13, wherein the fibre channel to SCSI appliance includes a
2 module for determining the address of the host.
- 1 16. The method of claim 14, wherein the iSCSI to SCSI appliance includes a
2 module for determining the address of the host.
- 1 17. The method of claim 1, wherein the target device includes a module for
2 identifying the address of the host.

1 18. The method of claim 9, wherein determining the address of the one of the
2 plurality of hosts that issued the original command includes decoding a fibre channel frame to
3 obtain the fibre channel port identification address, the fibre channel frame including the
4 original command and the fibre channel identification address of the host that issued the
5 original command.

1 19. The method of claim 11, wherein determining the address of one of the plurality
2 of hosts that issued the original command includes decoding an iSCSI protocol data unit to
3 obtain an IP address and an iSCSI node name, the iSCSI protocol data unit including the
4 original command, the IP address of the host that issued the original command, and the iSCSI
5 node name of the host that issued the original command.

1 20. The method of claim 1, wherein adding an identifier to the original command
2 encoded in the second protocol includes:
3 identifying an unused field in the original command encoded in the second
4 protocol; and
5 encoding the identifier of the host that issued the original command in the
6 unused field.

1 21. The method of claim 1, wherein adding an identifier to the original command
2 encoded in the second protocol includes:
3 identifying an unused field in the original command encoded in the second
4 protocol;
5 creating a reference table, each element of the reference table being associated
6 with a host and an index value, wherein a host is identified by an associated index value;
7 encoding the associated index value of the host that issued the original command
8 in the unused field.

1 22. The method of claim 9, wherein adding an identifier to the original command
2 encoded in the second protocol includes:

3 identifying a control field byte associated with the original command encoded in
4 the first protocol, the control field byte including eight bits, one of the eight bits including an
5 identification bit, wherein a SCSI device will reject a SCSI command having a non-zero control
6 field;

7 setting an identification bit to one if the value of the control field byte is non-
8 zero; and

9 encoding the fibre channel port identification address into the remaining seven
10 bits of the control field byte.

1 23. The method of claim 11, further comprising:

2 creating a table, the entries of the table including IP addresses of the hosts, an
3 index being associated with each entry of the table;

4 wherein adding an identifier to the original command encoded in the second
5 protocol includes:

6 identifying a control field byte of a command descriptor block, the
7 control field byte including eight bits;

8 identifying an IP index value of the table, wherein the IP index value is
9 the index value of the element of the table having an IP address equivalent to the IP address of
10 the host that issued the original command;

11 setting an identification bit to one if the value control field byte is non-
12 zero; and

13 encoding the IP index value into the remaining seven bits of the control
14 field byte, the index value associated with the IP address or iSCSI node name of the issuing
15 host.

1 24. The method of claim 22, wherein converting the revised command to the
2 original command includes clearing all bits in the control field byte if the identification bit is
3 equal to zero.

1 25. A method for identifying a fibre channel host at a SCSI layer of an information
2 handling system, the method comprising:
3 issuing an original SCSI command encoded in a fibre channel protocol from one
4 of a plurality of hosts, the original SCSI command having a control field;
5 receiving the original SCSI command at a fabric switch, the fabric switch having
6 a port address, the port address being related to the one of the plurality of hosts that issued the
7 original SCSI command;
8 transmitting the original SCSI command to a fibre channel to SCSI appliance;
9 determining the one of the plurality of hosts that issued the original SCSI
10 command;
11 converting the original SCSI command encoded in the fibre channel protocol to
12 an original SCSI command encoded in a SCSI protocol;
13 modifying the control field of the original SCSI command encoded in the SCSI
14 protocol to include an identifier to make a revised SCSI command, the identifier associating the
15 one of the plurality of hosts that issued the original SCSI command encoded in the fibre
16 channel protocol;
17 sending the revised SCSI command to a target device; and
18 converting the revised SCSI command encoded in the SCSI protocol to the
19 original SCSI command encoded in the SCSI protocol.

26. A method for identifying a fibre channel host at a SCSI layer of an information handling system, the information handling system including a plurality of hosts, a fabric switch responsive to a fibre channel protocol, an appliance for converting the fibre channel protocol into a SCSI protocol, a target device responsive to the SCSI protocol, one of the plurality of fibre channel hosts issuing an original SCSI command encoded in a fibre channel protocol, the method comprising:

issuing an original SCSI command encoded in a fibre channel protocol from one of a plurality of hosts, the original SCSI command having a control field;

receiving the original SCSI command at a fabric switch, the fabric switch having a port address, the port address being related to the one of the plurality of hosts that issued the original SCSI command;

transmitting the original SCSI command to a fibre channel to SCSI appliance;

determining the port address of the one of the plurality of hosts that issued the original SCSI command;

identifying the value of the control field in the original SCSI command, wherein a target SCSI device will reject a SCSI command having a non-zero control field;

converting the original SCSI command encoded in the fibre channel protocol to an original SCSI command encoded in a SCSI protocol;

setting an identification bit to one if the original control field is non-zero, the identification bit being included in control field;

encoding the port address of the host that issued the original command in the control field of the original SCSI command encoded in the SCSI protocol to make a revised SCSI command having a revised control field;

sending the revised SCSI command to a target device; and

setting the revised control field byte of the revised SCSI command encoded in the SCSI protocol to the zero of the identification bit is zero.

27. A method for identifying a host at a SCSI layer of an information handling system, the method comprising:

- issuing an original SCSI command encoded in an iSCSI protocol from one of a plurality of hosts, each host having an IP address, the original SCSI command including a control field;
- receiving the original SCSI command at an Ethernet switch;
- transmitting the original SCSI command to an iSCSI-SCSI appliance;
- determining the one of the plurality of hosts that issued the original SCSI command;
- converting the original SCSI command encoded in the iSCSI protocol to an original SCSI command encoded in a SCSI protocol;
- modifying the control field of the original SCSI command encoded in the SCSI protocol to include an identifier to make a revised SCSI command, the identifier associating the one of the plurality of hosts that issued the original SCSI command encoded in the iSCSI protocol;
- sending the revised SCSI command to a target device; and
- converting the revised SCSI command encoded in the SCSI protocol to the original SCSI command encoded in the SCSI protocol.

28. A method for identifying a host at a SCSI layer of an information handling system, the information handling system including a plurality of hosts, an Ethernet switch responsive to an Internet Protocol, an appliance for converting the iSCSI type Protocol into a SCSI protocol, a target device responsive to the SCSI protocol, one of the plurality of the hosts issuing an original SCSI command encoded in the iSCSI protocol, the iSCSI protocol including the Internet Protocol, the method comprising:

- issuing an original SCSI command encoded in an iSCSI protocol from one of a plurality of hosts, each host having an IP address, the original SCSI command including a control field;

- receiving the original SCSI command at an Ethernet switch;

- transmitting the original SCSI command to an iSCSI-SCSI appliance;

- determining the IP address of the one of the plurality of hosts that issued the original SCSI command;

- creating a table, the entries of the table including the IP addresses of the hosts, an index value is associated with each entry of the table;

- identifying an IP index value of the table, wherein the IP index value is the index value of the element of the table having an IP address equivalent to the IP address of the host that issued the original SCSI command;

- identifying the value of the control field in the original SCSI command, wherein a target SCSI device will reject a SCSI command having a non-zero control field;

- converting the original SCSI command encoded in the iSCSI protocol to an original SCSI command encoded in a SCSI protocol;

- setting an identification bit to one if the original control field is non-zero, the identification bit being included in the control field;

- encoding the IP index value of the host that issued the original command in the control field of the original SCSI command encoded in the SCSI protocol to make a revised SCSI command having a revised control field;

- sending the revised SCSI command to a target device; and

- if the identification bit is zero, setting the revised control field byte of the revised SCSI command encoded in the SCSI protocol to the zero.

1 29. A system for identifying a host at a physical layer of an information handling
2 system, the system comprising:
3 a plurality of hosts operably connected to a switch, one of the plurality of hosts
4 issuing an original command in a first protocol;
5 an appliance for converting the first protocol into a second protocol, the second
6 protocol encoding the original command, the appliance including a module for encoding the
7 address of the host that issued the original command, the encoding module adding an identifier
8 to the command in the second protocol to make a revised command, the identifier associating
9 the one of the plurality of hosts that issued the first command; and
10 a target device responsive to the command in the second protocol, the target
11 device including a module for converting the revised command to the original command.

1 30. A computer program for identifying a host at a physical layer of an information
2 handling system, the computer program comprising executable instructions that cause an
3 information handling system to:
4 issue an original command from one of a plurality of hosts, the original
5 command is encoded in a first protocol;
6 receive the original command by a protocol converting module;
7 determine an address of the one of the plurality of hosts that issued the original
8 command;
9 convert the first protocol to a second protocol, wherein the original command is
10 encoded in the second protocol;
11 add an identifier to the original command encoded in the second protocol to
12 make a revised command, the identifier associating the one of the plurality of hosts that issued
13 the original command; and
14 send the revised command to a target device.